REMARKS

Claims 1-18 are pending. New claims 19 and 20 have been added. The Examiner's reconsideration of the rejections is respectfully requested in view of the amendments and remarks.

Applicant gratefully acknowledges the Examiner's indication that claims 6, 14, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Examiner has objected to the specification as including a typographical error. The error has been corrected by amendment. The Examiner's reconsideration of the objection is respectfully requested.

Claims 1, 3, 8, 9, 11, and 15 have been rejected under 35 U.S.C. 102(e) as being anticipated by Sundar et al. (U.S. Patent No. 6,198,976). The Examiner stated essentially that Sundar teaches all of the limitations of claims 1, 3, 8, 9, 11, and 15.

Claim 1 recites, *inter alia*, "determining the circle upon determining a connectivity of the first and second pair of edge points." Claim 8 claims, *inter alia*, "extracting a first pair of edge points along an x-axis of the image; extracting a second pair of edge points along a y-axis of the image." Claim 15 claims, *inter alia*, "computer readable program code for causing the computer to extract a first pair of edge points along an x-axis of the image; computer readable program code for causing the computer to extract a second pair of edge points along a y-axis of the image."

Sundar teaches a method for finding the center of a substrate (see Title of the Invention). Sundar teaches three data points on a circle will define the circle (see col. 10, liens 3-4), but that "most substrates are not entirely circular. Rather, substrates typically have a notch or one or two straight edges, called substrate flats..." (See col. 10, lines 12-15.) Sundar does not teach determining a circle in a region of interest, much less, "determining the circle upon determining a connectivity of the first and second pair of edge points" as claimed in claim 1. Sundar does not teach determining a particular shape of the substrate. Rather, Sundar determines an edge of the substrate at several locations and determines a center of the substrate regardless of shape. Nowhere does Sundar teach determining the circle upon determining a connectivity of the first and second pair of edge points as claimed in claim 1. Therefore, Sundar does not teach every limitation of claim 1.

Referring to claims 8 and 15, claims 8 and 15 recite, *inter alia*, extracting "a first pair of edge points along an *x*-axis of the image."

Sundar does not teach image processing, much less extracting "a first pair of edge points along an *x*-axis of the image," essentially as claimed in claims 8 and 15. Sundar teaches a method for determining a center of a substrate using a set of emitter/sensor pairs, such as infrared beam emitters and sensors (see col. 1, lines 59-62). The emitter/sensor pairs do not produce an image. Sundar does not teach an image. Therefore, Sundar fails to teach every limitation of claims 8 and 15.

Claim 3 depends from claim 1. Claims 9 and 11 depend from claim 8. The dependent claims are believed to be allowable for at least the reasons given for the independent claims, respectively. The Examiner's reconsideration of the rejection is respectfully requested.

Claims 4, 5, 12, 13, 16, and 17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sundar as applied to claims 1, 8, and 15, and further in view of Yamagata (U.S. Patent No. 6,021,222). The Examiner stated essentially that the combined teachings of Sundar and Yamagata teach or suggest all the limitations of claims 4, 5, 12, 13, 16, and 17.

Claims 4 and 5 depend from claim 1. Claims 12 and 13 depend from claim 8. Claims 16 and 17 depend from claim 15. The dependent claims are believed to be allowable for at least the reasons given for the independent claims, respectively. At least claims 4, 12, and 16 are believed to be allowable for additional reasons.

Claims 4 and 12 claim, *inter alia*, "determining whether a local maximum along the gradients match the coordinates for any edge point." Claim 16 recites, *inter alia*, "computer readable program code for causing the computer to determine whether a local maximum along the gradients match the coordinates for any edge point."

Sundar does not teach or suggest "determining whether a local maximum along the gradients match the coordinates for any edge point" as claimed in claims 4 and 12, and essentially as claimed in claim 16.

Yamagata teaches that "if the difference in intensities is a local maximum relative to the neighborhood 13, then the given image pixel is considered an edge pixel." Yamagata does not confirm whether the given image pixel is an edge pixel after determining the local maximum relative to the neighborhood. Yamagata does not teach "determining whether a local maximum along the gradients match the coordinates for any edge point," as claimed in claims 4 and 12, and essentially as claimed in claim 16. Yamagata assumes a local maximum to be an edge point and does not teach a match of coordinates, essentially as claimed in claims 4, 12, and 16. Therefore, Yamagata fails to teach all the limitations of claims 4, 12, and 16. Yamagata fails to cure the

deficiencies of Sundar. Thus, the combined teachings of Sundar and Yamagata fail to teach or suggest every limitation of claims 4, 12, and 16, respectively. The Examiner's reconsideration of the rejection is respectfully requested.

Claims 2 and 10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sundar as applied to claims 1 and 8, and further in view of Huber (U.S. Patent No. 4,523,188). The Examiner stated essentially that the combined teachings of Sunday and Huber teach or suggest all the limitations of claim 2 and 10.

Claim 2 depends from claim 1. Claim 10 depends from claim 8. The dependent claims are believed to be allowable for at least the reasons given for the independent claims, respectively. The Examiner's reconsideration of the rejection is respectfully requested.

Claim 7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sundar.

Claim 7 depends from claim 1. Claim 7 is believed to be allowable for at least the reasons given for claim 1. The Examiner's reconsideration of the rejection is respectfully requested.

New claims 19 and 20 claim, *inter alia*, "determining the circle upon determining a connectivity of the first and second pair of edge points." Claims 19 and 20 are believed to be allowable for at least the reasons given for claim 1.

Accordingly, claims 1-20 are believed to be allowable for at least the reasons stated. The Examiner's reconsideration of the rejections is respectfully requested. For the forgoing reasons, the application is believed to be in condition for allowance. Early and favorable reconsideration is respectfully requested.

Respectfully submitted,

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